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PUERTO RICAN WATER-STRIDERS (HEMIPTERA)

BY CARL J. DRAKE¹ AND J. MALDONADO CAPRILES²

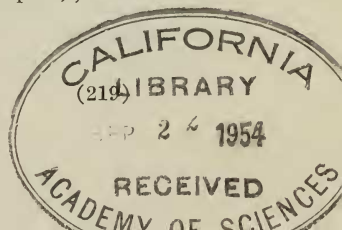
Very little is known about the aquatic hemipterous fauna of Insular America, and the literature dealing with the known species is widely scattered. The present paper is an attempt to bring together published records on the occurrence of water-striders in Puerto Rico and also to include data from the collections of the University of Puerto Rico and authors. Most of the unpublished records herein are based upon a study of specimens collected by Dr. H. D. Tate in 1936-37 and during the past two years by the junior author. One species of the genus *Microvelia* is described below as new to science. As it is plainly evident from the literature, the water-strider fauna of Puerto Rico is poorly represented in collections, and several genera and many species are as yet to be netted in the island.

In "*Insectae Portoricensis*" (Jr. Dept. Agr. Porto Rico, 7(1):1-313, 1923; and Supplement, *loc. cit.*, 7(4):38-43, 1924), Wolcott gives a very good review of the literature and publishes a preliminary list of all species of insects known to occur in Puerto Rico. This author included the specific names of five species of water-striders as follows. Family Gerridae: *Tenagogonus (Limnometra) (quadrilineatus)*, Champion; and *Limnogonus marginatus*, Guérin-Meneville (= *Limnogonus franciscanus* Stål). Family Veliidae: *Microvelia albonotata* Champion; *Microvelia pulchella* Westwood; and *Rhagovelia angustipes* Uhler. In the latter family, Wolcott also included an undetermined water-strider as *Mesovelia* (=family Mesoveliidae, probably *Mesovelia mulsanti* Buchanan-White).

In a comprehensive survey of the Hemiptera-Heteroptera of Puerto Rico, (N. Y. Acad. Sci., 14(3):263-411, 63 figs, 1939), Barber enumerated 12 species of water-striders divided among four families as follows. Family Mesoveliidae: *Mesovelia mulsanti caraiba* Jaczweski (p. 393). Family Hydrometridae: *Hydrometra consimilis* Barber (p. 406; type locality). Family Gerridae: *Rheumatobates imitator* Uhler (p. 407); *Limnogonus franciscanus* Stål (p. 407); *Gerris remigis* Say (p. 408); and *Gerris cariniventris* Champion (p. 409). Family Veliidae: *Microvelia pulchella* Westwood (p. 410); *Microvelia robusta* Uhler (411) (= *Microvelia incerta* Kirby); *Microvelia capitata* Guerin-Meneville (p. 411) (wrongly named = *Microvelia albonotata* Champion); *Microvelia*

¹Iowa State College, Ames, Iowa.

²University of Puerto Rico, Mayaguez, Porto Rico.



paludicola Champion (p. 413); *Rhagovelia collaris* Burmeister (p. 413); and *Rhagovelia plumbea* Uhler (p. 414). (*Trochopus plumbea* Uhler). Barber (p. 414) also states that *Rhagovelia augustipes* of Walcott (*loc. cit.*, p. 244) is probably the same as and thus should be referred to *R. collaris*.

The following data are taken from specimens of water-striders in the collections of the authors, all from Porto Rico. The list of 21 species includes all but two of the species catalogued by Walcott and Barber, and these two (*Gerris remigis* and *Trochopus plumbea* Uhler) makes a total of 23 different species now known to inhabit waters of Porto Rico.

Family Hebridae

Merragata foveata B.—White: Cartagena Lagoon, June 9, 1946.

Family Hydrometridae

Hydrometra consimilis Barber: Cartagena, Lagoon, Jan. 15, 1954.

Hydrometra sp.; Immature female, Cartagena Lagoon, Jan. 15, 1954.

Very different from *H. consimilis*.

Family Gerridae

Gerris cariniventris Champion: Mayaguez and Maricao, 1936 & 1937.

Tenagogonus quadrilineatus Champion: Maricao, 1936.

Limnogonus franciscanus (Stål): Mayaguez & Maricao, 1936.

Telmatometra whitei Bergroth: Mayaguez, 1936.

Telmatometra ujhelyii Esaki: Mayaguez, 1936.

Metrobates laudatus Drake & Harris: Juan Diaz, Rio Pidros, March 21, 1936.

Rheumatobates minutus Hungerford: Mayaguez, 1936.

Rheumatobates imitator (Uhler): Mayaguez, 1936.

Family Veliidae

Microvelia paludicola Champion: Mayaguez, Jan. 30, 1954.

Microvelia pulchella Westwood: Mayaguez and Maricao, 1936; Mono Island, Apr. 16-18, 1954.

Microvelia incerta Kirby (= *M. robusta* Uhler): Mayaguez, Maricao, Mono Island.

This species and *M. pulchella* are very common, widely distributed and often taken together in the same schools. *Robusta* is probably just a subspecies of *pulchella*, and separated largely on size.

Microvelia longipes Uhler: Mayaguez, 1936 and Feb. 15, 1954.

Microvelia albonotata Champion: Mayaguez, 1936 and Feb. 15, 1954.

Microvelia hinei Drake: Cartagena Lagoon, Jan. 15, 1954.

Microvelia mimula B.—White: Mayaguez, Feb. 1, 1954; Adjuntas, artificial pool, Feb. 12, 1954.

Microvelia tateiana Drake: Maricao, May 10, 1936.

Microvelia portoricensis Drake: Mayaguez, Apr. 4, 1936; Maricao, 1936; Larza, 1930.

Microvelia zillana Drake, Mayaguez, April 4, 1936.

Microvelia argusta, n. sp.

Apterous form (male): Small, brownish testaceous with a few blackish marks and some bluish pruinose; pubescence brownish; dorsal sur-

face with some very fine brownish hairs; (more numerous on sides of abdomen) body beneath testaceous. Head convex above, with median punctate line becoming blackish anteriorly, with bluish adjacent to eyes. Rostrum testaceous with apex blackish, reaching to middle of mesosternum. Eyes large, reddish fuscous. Antennae slender, clothed with pubescence and numerous long hairs, fuscous with basal part of first segment and usually basal half or more of undersides of second and third segments (sometimes also a little of fourth) whitish testaceous—measurements—I, 17; II, 14; III, 25; IV, 26.

Pronotum with small punctures, broadly produced posterior so as to conceal slightly more than half of mesonotum, slightly more than twice as wide as median length (48:21), longitudinally ridged on median line, to hind margin wide and slightly concave (almost truncate); mesonotum less than half as long as pronotum. Legs moderately long, with femora nearly equal in thickness, unarmed in both sexes, testaceous with all tarsi, superior faces of tibiae and apical half or more of the dorsal surfaces of femora (only narrow apical part of fore femora) brown; tarsi of middle and hind legs nearly equal in length; anterior tibiae with a short apical comb; measurements—anterior femora 0.50 mm. long, the tibiae 0.40; middle femora 0.54 mm. the tarsi 0.50; hind femora 0.68 mm., the tibiae 0.78 mm. Abdomen slightly narrowed posteriorly, last tergite not quite twice as long as preceding segment, with black mark on each side of the second and third tergites, these form spots and the penultimate tergite bluish, venter without spines or tubercles. Male genital segments not very large, testaceous; segment one beneath deeply broadly roundly excavated behind; third segment without lateral spines. Length, 1.90 mm.; width, 0.75 mm.

Female: Larger than male, but with color, markings, legs and antennal measurements about the same. Connexiva wider, nearly upright, not reflexed behind. Last dorsal tergite about one-half longer than preceding segment.

Macropterous form: Pronotum moderately convex, blackish with a transverse band a little behind collar and a broad, median, longitudinal strip extending behind disc flavous, bluish with a few silvery hairs in front; humeri moderately elevated; width across humeral angles greater than median length (66:56). Head mostly black with a broad brown stripe on each side of median impressed line, with sides adjacent to eyes quite bluish. Hemelytra as long as abdomen, brownish testaceous with the apical two-fifths blackish fuscous; area in cells in basal half somewhat whitish, with five silvery white spots in darkened half—four just beyond the middle (two spots in median cell) and one spot in apical cell. Length, 2.31 mm.; width, 0.85 mm.

Type (male) and *allotype* (female), both apterous, Mayaguez, Feb. 1, 1954, in Drake Collection. *Paratypes*: 2 males, one alate, same data as type.

Very much like *M. mimula* B. White in size, color and markings, but easily distinguishable by the smaller male genital segments and unarmed hind femora. In *mimula* the hind femora of the male are spined beneath and the penultimate ventrite bears a small tubercle at the middle near the hind margin; the first genital segment is widened apically and widest at the hind margin, and the tenth tergite (3rd genital segment) bears on each side a very long lateral spine.

